

port their discoveries, so that more knowledge may be obtained of the range of this interesting little plant.

BOSTON.

EXPLANATION OF PLATE 15, figs. 1-7. Fig. 1, *Bartonia tenella*, habital sketch; fig. 2, same, corolla-lobes. Fig. 3, *B. iodandra*, one of the original Newfoundland specimens; fig. 4, corolla-lobes of same. Fig. 5, *B. iodandra*, a specimen from the Blue Hill station. Fig. 6, *B. Moseri*, a specimen from Covington, La.

A LITTLE-KNOWN NEW ENGLAND GOLDENROD.

C. B. GRAVES.

ON October 1st, 1898, specimens of a peculiar *Solidago* were collected by the writer on the gravelly terrace bordering Poquonnoc River, Groton, Connecticut. The same form was found again last September both at the locality above mentioned and on an open, rocky hillside near the shore, some miles further east. The plant was fairly abundant at both stations, growing with *S. rugosa* Mill., *S. Canadensis* L., *S. sempervirens* L., and *S. juncea* Ait., but having manifest points of difference from all those species.

Careful examination of this material led to the conclusion that it represented a species distinct from any described in the current manuals.

Through the kindness of Mr. Fernald, who examined some of these specimens, I have learned that at various times during a considerable period of years plants seemingly identical with these have been found at several points in eastern Massachusetts. This form was probably referred to by Young in his *Flora of Oak Island, Revere, Mass.* (1882), as "*Solidago sp.?* Perhaps a cross between *S. sempervirens* and *S. altissima*." This Oak Island station was rediscovered in recent years by Mr. Wm. P. Rich, of Boston, to whom I am greatly indebted for information upon the plant in Massachusetts. What is apparently the same form has been collected also in Medford, Malden, and Winthrop, Mass.

Dr. Gray, to whom most of these Massachusetts specimens were submitted, classed them doubtfully as hybrids between *S. rugosa* Mill. and *S. sempervirens* L. Later students, however, have been more inclined to regard this form as entitled to specific rank. Mr. Wm. P. Rich, who has a thorough field knowledge of the Oak Island plant, has

for several years maintained this view, — an opinion held also by Mr. Fernald. In fact, anyone observing this form attentively in the field could, it seems to me, hardly regard it as other than a good species.

From his study of all this material, Mr. Fernald considers it satisfactorily referable to *Solidago asperula* Desfontaines. Comparison with authentic specimens from the Paris Garden leaves no reasonable doubt that these interesting New England forms are — at least in part, probably all — included in *S. asperula*. That name should, therefore, be reinstated as representing this specific type.

The original description of Desfontaines is as follows :

SOLIDAGO ASPERULA. Caule villosa, asperulo; foliis lanceolatis, levissime serrulatis; racemis elongatis, patulis; floribus secundis.

Caulis 3-4-pedalis, hirsutis, pilis brevibus, asperulis. Folia lanceolata, glabra, levissime serrulata. Flores racemosi, terminales. Racemi longi, paniculati, patentes. Flores numerosi, parvi, secundi, lutei. Rami pubescentes. — Desf. Cat. ed. 2, 403.

From recent material the species may be characterized as follows :

Stems from horizontal rootstocks, rather stout, erect, $2\frac{1}{2}$ to $4\frac{1}{2}$ feet tall, simple or branched at the summit, commonly deep purple, papillose, slightly scabrous to moderately pubescent, very leafy; branches leafy, papillose pubescent with short whitish hairs; leaves absent or shrivelled at and near base of stem at flowering time, largest below (4 to $7\frac{1}{2}$ inches long, $\frac{3}{4}$ to $1\frac{1}{2}$ inches wide), erect or ascending, thickish and usually somewhat rugose, smooth scabrous or sparingly pubescent, pinnately veined, rarely somewhat triple-nerved, oblong or elliptical-lanceolate to linear-lanceolate, acute, sessile or the lower tapering into margined petioles, entire to sharply serrate, the margins very rough; leaves of branches much smaller, passing into the bracts of the racemes; inflorescence paniculate, varying from simple small and close to large open and compound forms, often markedly corymboid; racemes densely or loosely flowered, strongly secund, often recurved, pubescent with whitish hairs; heads comparatively large ($2\frac{1}{2}$ to $3\frac{1}{2}$ lines high); involucreal scales imbricate in 4 to 5 rows, ciliate, the outer herbaceous, lanceolate-subulate, acute, puberulent on the back, the inner oblong-lanceolate to linear-oblong, obtuse or obtusish with scarious margin and tip, smooth or minutely scabrous on the back; rays 8 to 16 (usually 10 to 13), golden yellow, large ($1-1\frac{3}{8}$ lines x $\frac{3}{8}-\frac{5}{8}$ line); disc flowers 6 to 14 (usually 8 to 11), their corollas tubular campanulate, abruptly contracted midway; achenes pubescent (about $1 \times \frac{1}{4}$ line), linear oblong, slightly flattened.

Hab. Eastern Massachusetts and southeastern Connecticut in dry or dryish open soil.

In bloom during the last three weeks of September, most of the

plants being in best flowering condition during the second or third week, but a few prolonging its season into the first week of October. The discs, which at first are yellow, turn as they mature a purplish brown before any change takes place in the rays; thus flowers which have somewhat passed their prime show a marked color contrast between rays and discs.

Solidago asperula Desf. as here treated is a variable species, including several more or less well-marked forms. In the field, however, it has an aspect of its own, and is almost always easily recognizable at sight.

Its nearest relative is *S. rugosa* Mill., which also it most resembles in habit, but it is readily distinguished from that species by its smoother stem, its longer, smoother, less rugose, more erect leaves, and its much larger heads, with more numerous ample rays.

S. ulmifolia Muhl. inhabits wet ground, blooms a month or more earlier, and furthermore differs from *S. asperula* in its smooth stem and small heads, with few rays.

From *S. sempervirens* L. it is easily separated by its more slender, rougher stem, its thinner, smaller usually serrate leaves, its more open, broader panicle, and its smaller heads. Moreover, the seaside goldenrod has usually an abundance of basal leaves at flowering time, which is not the case with *S. asperula*.

Some forms suggest *S. Canadensis* L., because of their narrower somewhat triple-nerved leaves, but they are never as distinctly 3-ribbed as in that species. It is further distinguished from *S. Canadensis* by its smoother stem and leaves, and larger heads, with numerous broad rays.

From *S. Elliottii* Torr. & Gray its more or less rough papillose stem, its longer, narrower more erect leaves, the lower of which are often petioled, its broad rays, and its open paniculate or corymbose-paniculate inflorescence serve to differentiate it. Furthermore, *S. Elliottii* is an inhabitant of wet meadows and swamps, while *S. asperula* seems to prefer dry or dryish soil.

The writer is under great obligation to Mr. M. L. Fernald of the Gray Herbarium for indispensable aid in the preparation of this paper.